

**FIG. 1**

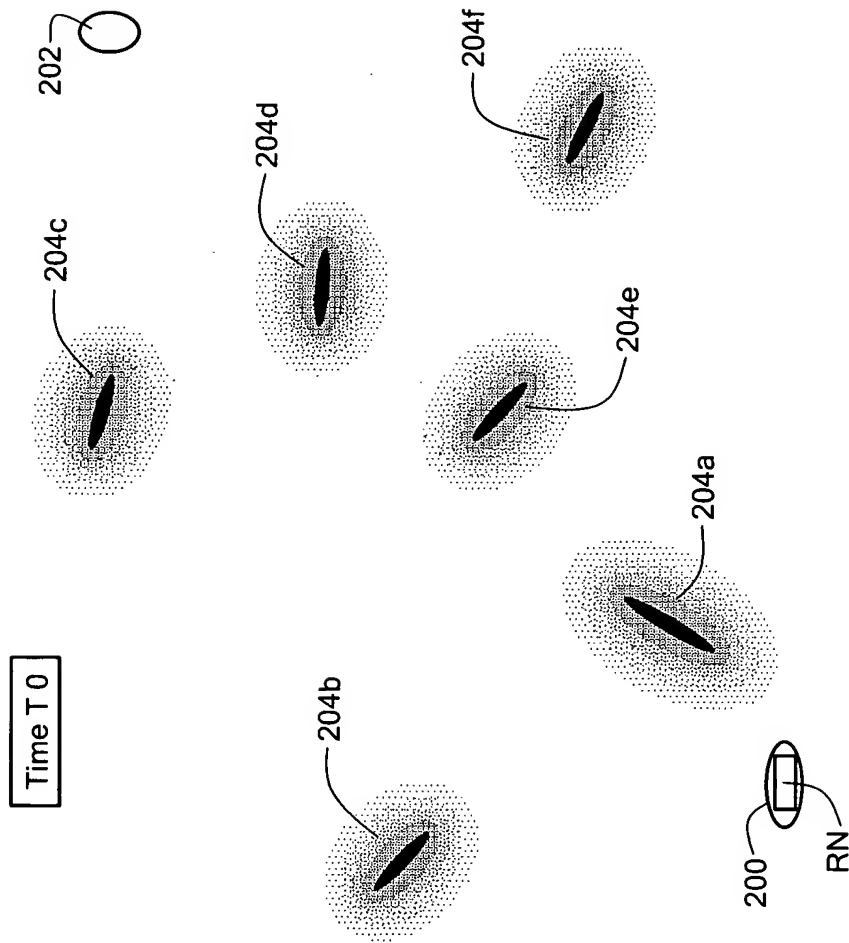


FIG. 2A

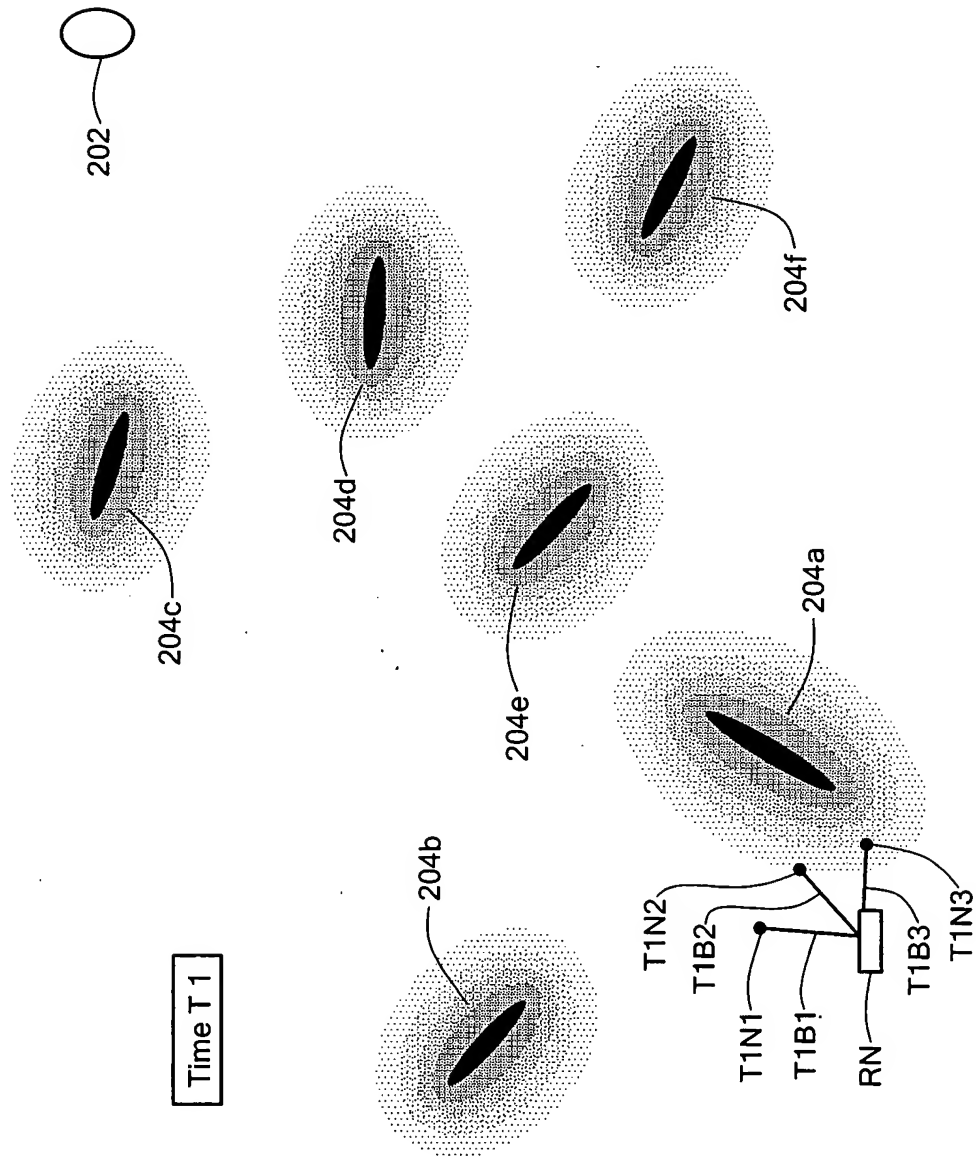
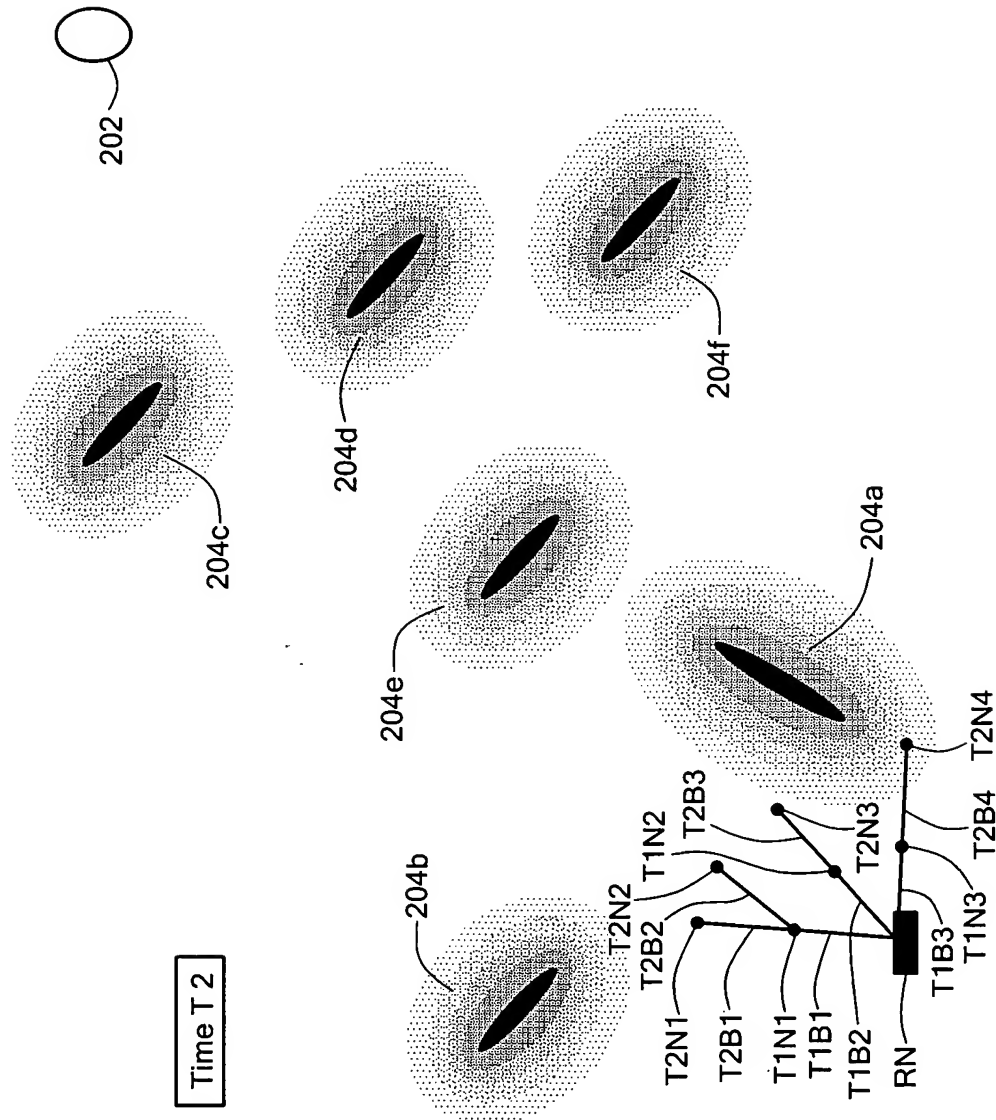
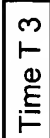


FIG. 2B

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**FIG. 2C**



**FIG. 2D**

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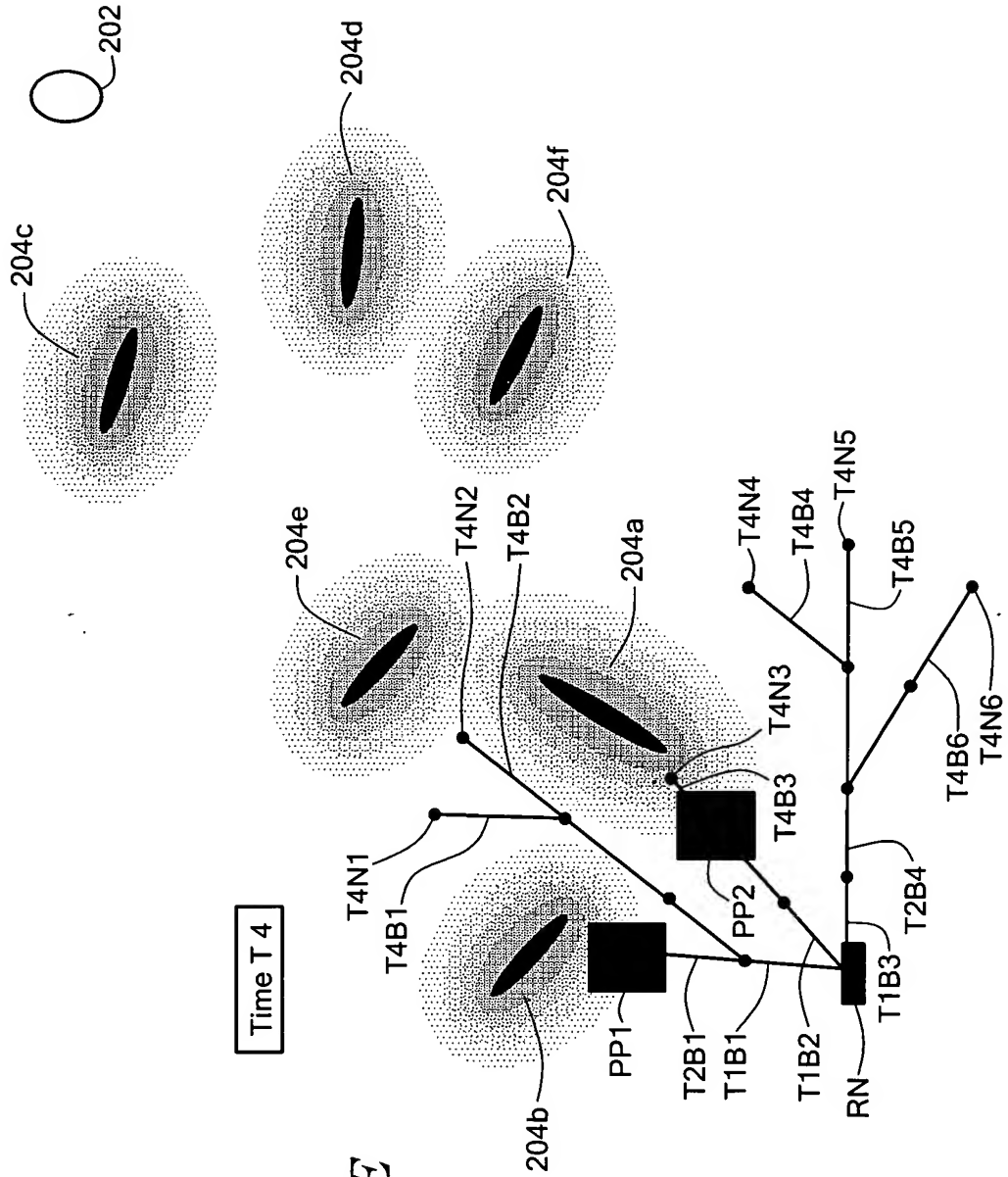


FIG. 2E

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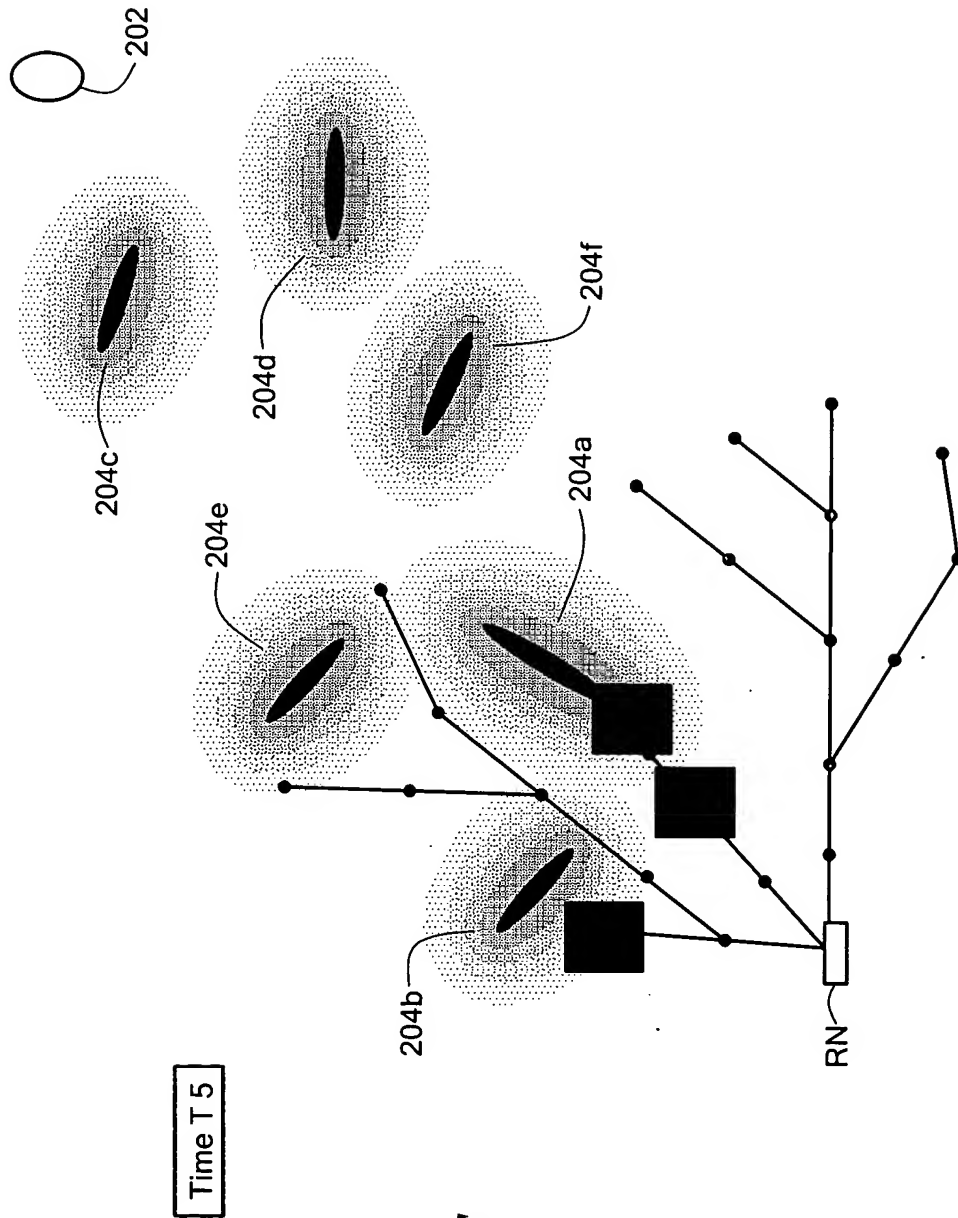


FIG. 2F

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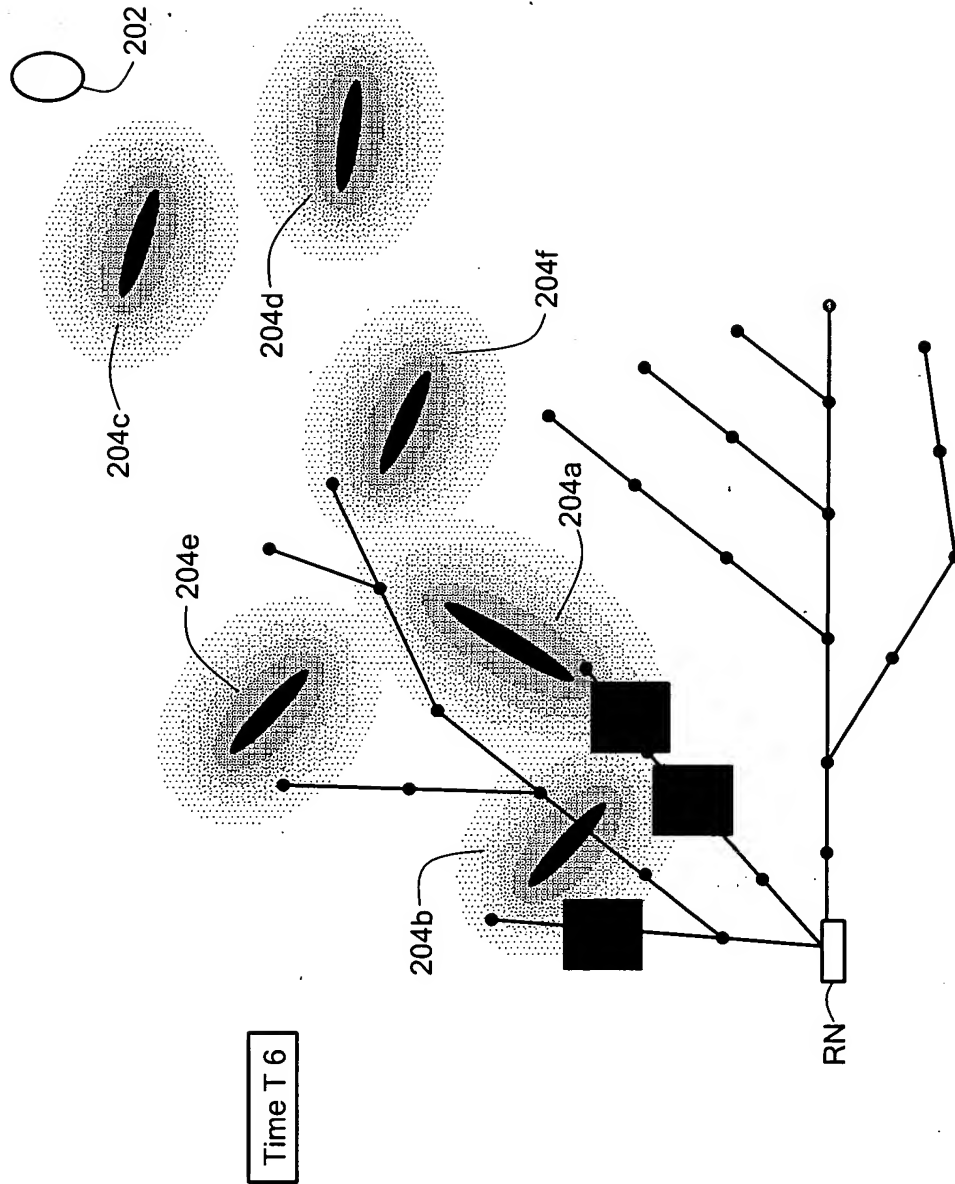


FIG. 2G



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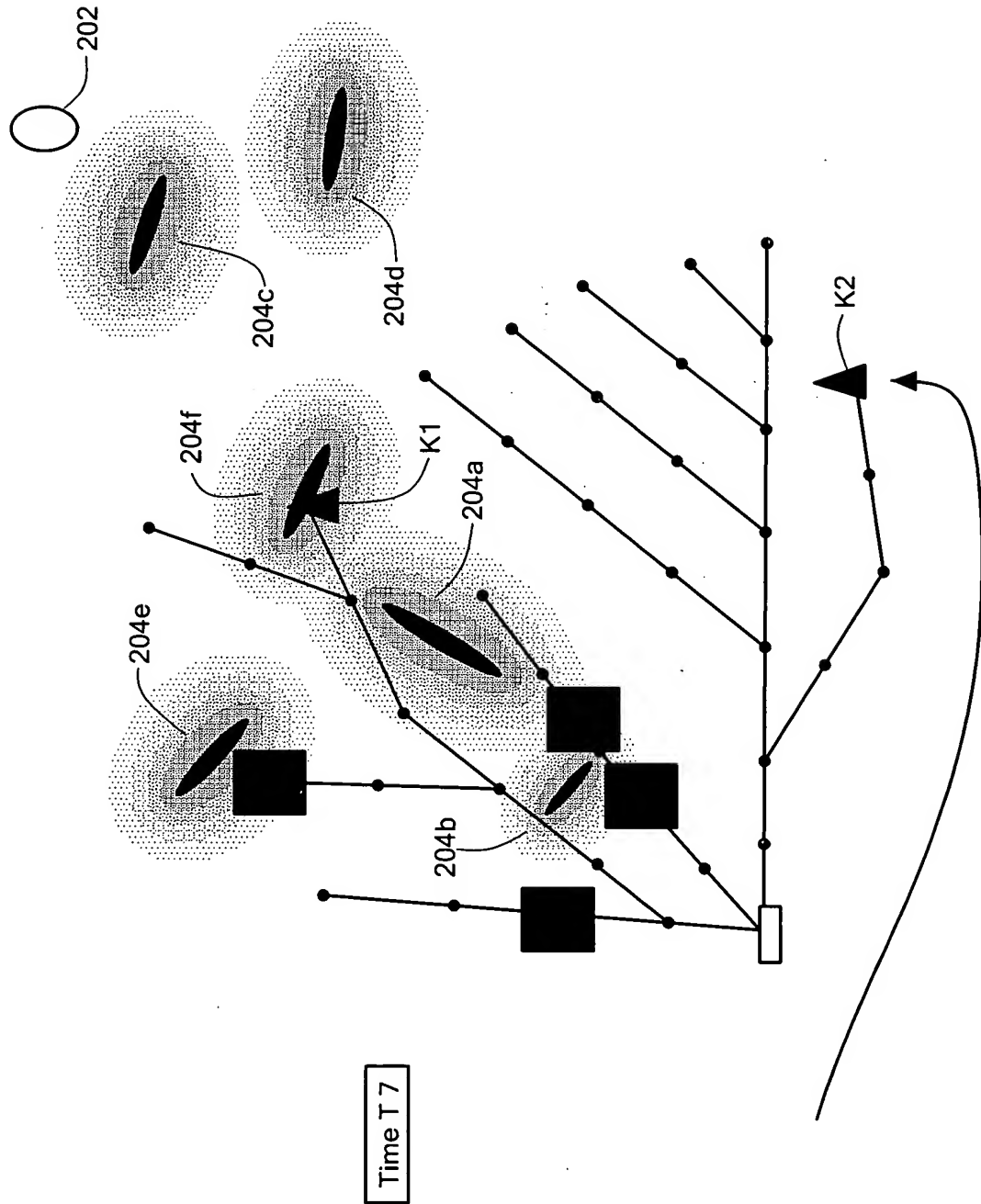
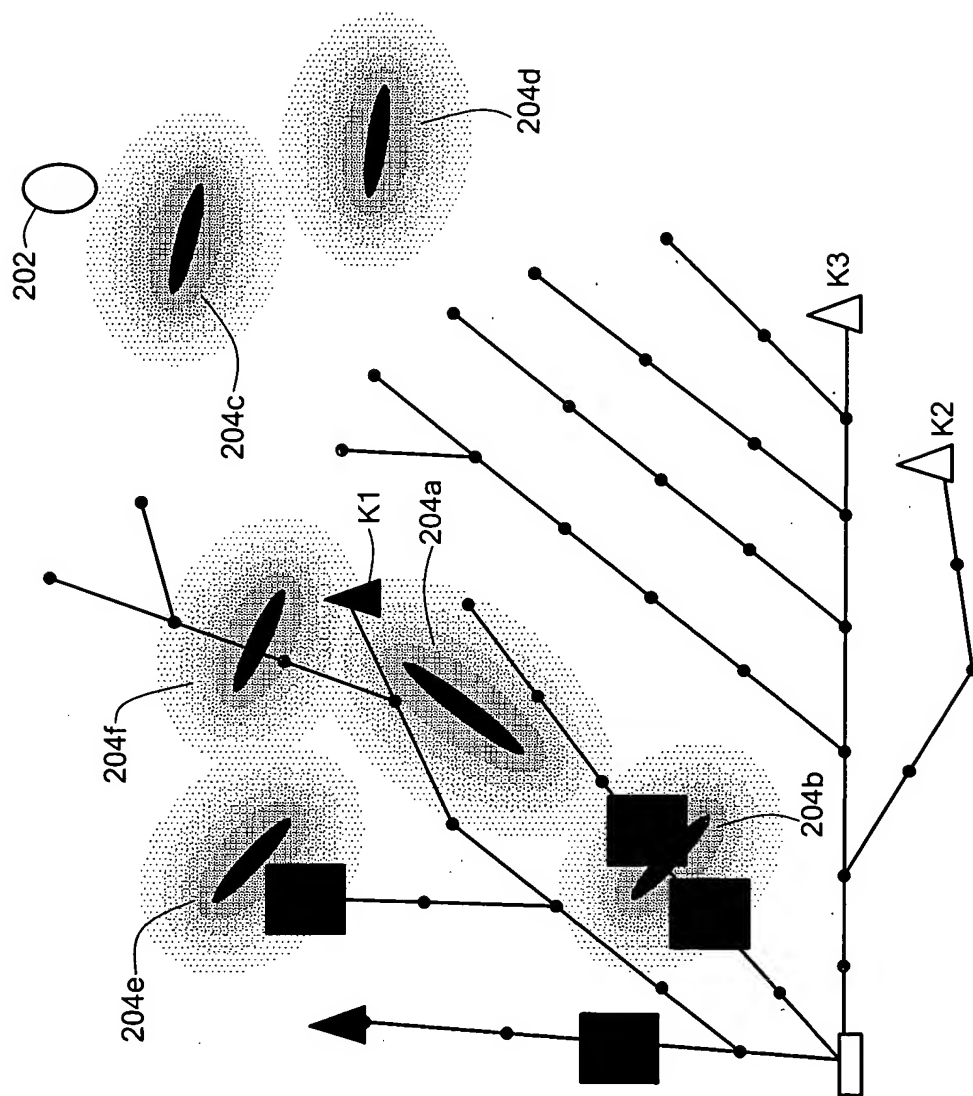


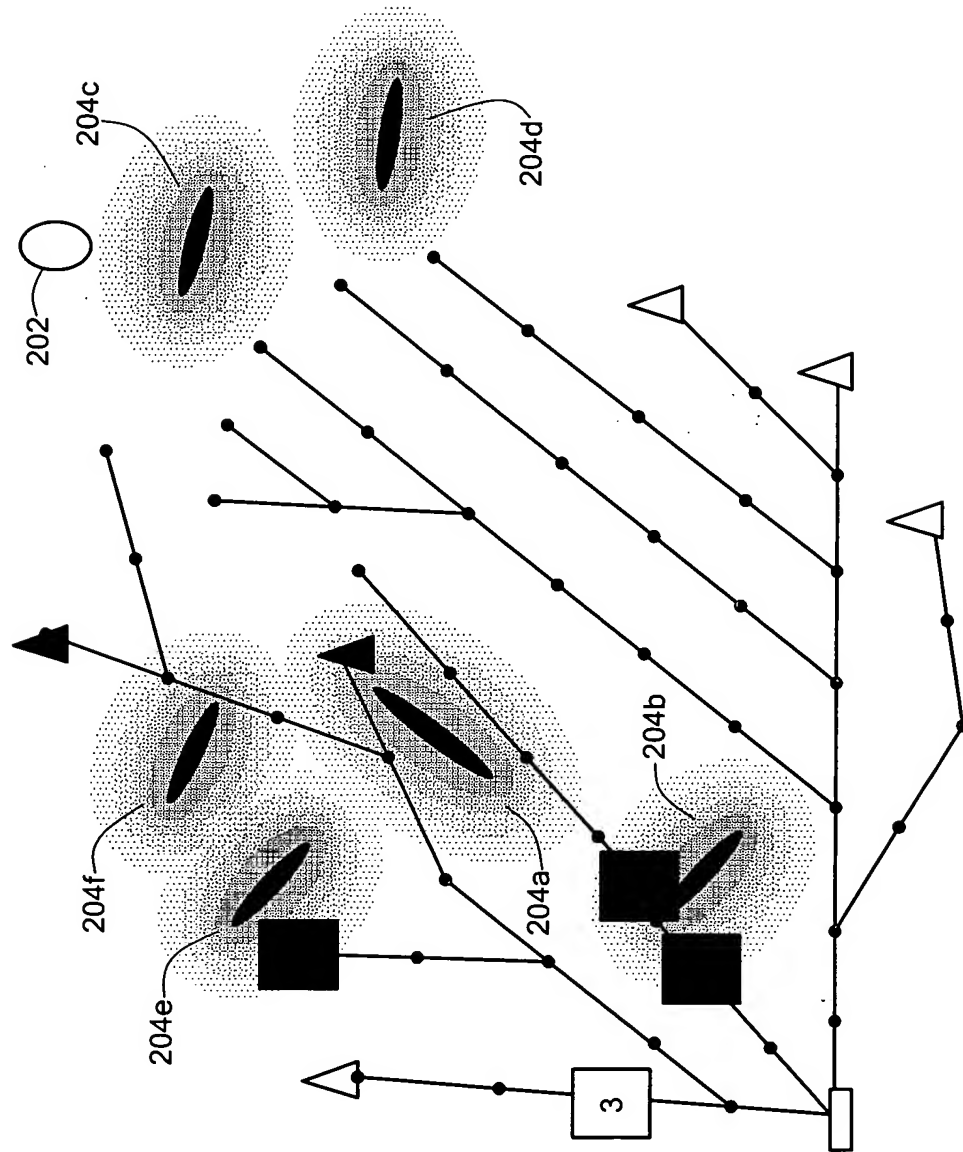
FIG. 2H

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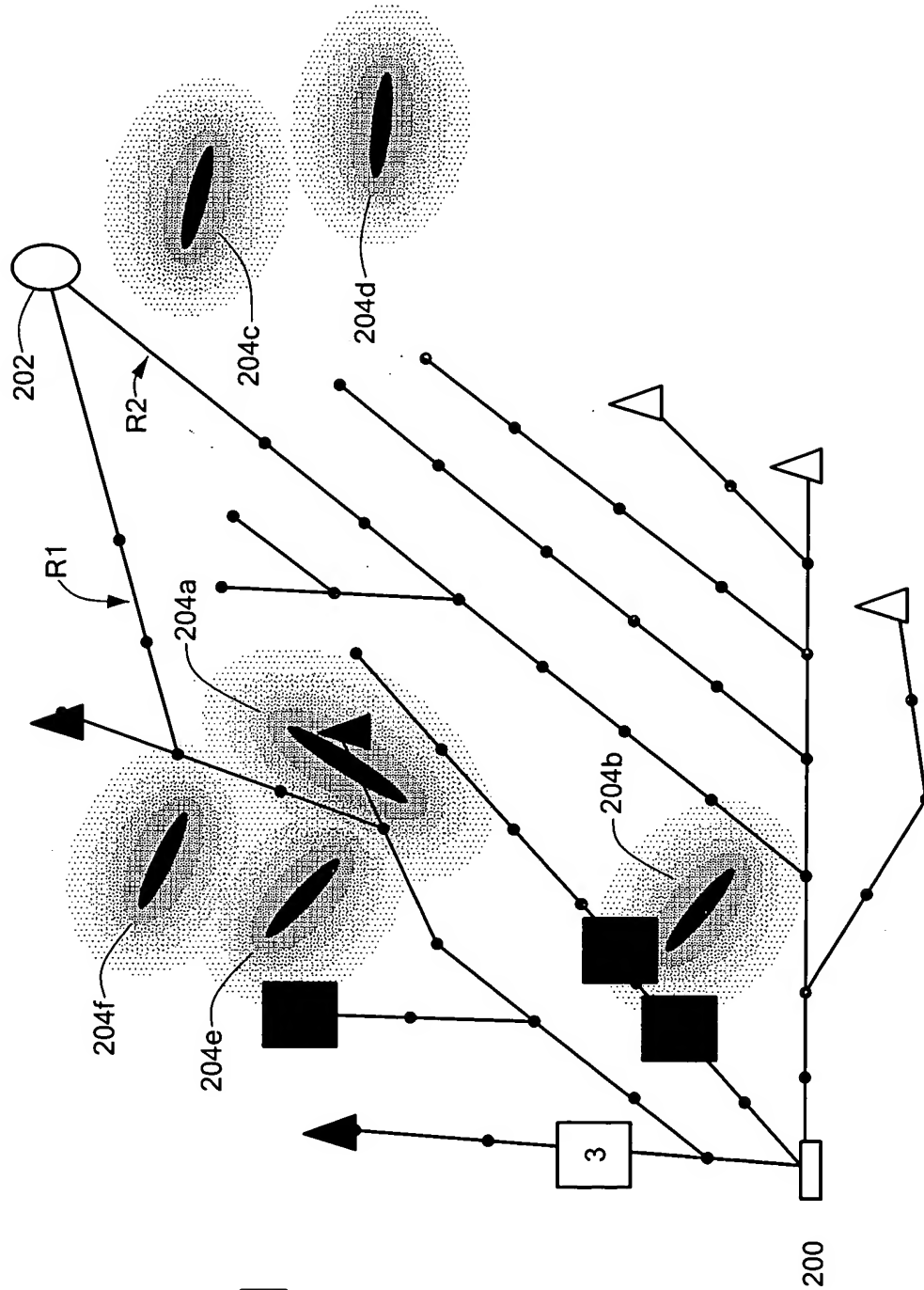
**FIG. 2I**

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**FIG. 2J**

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**FIG. 2K**

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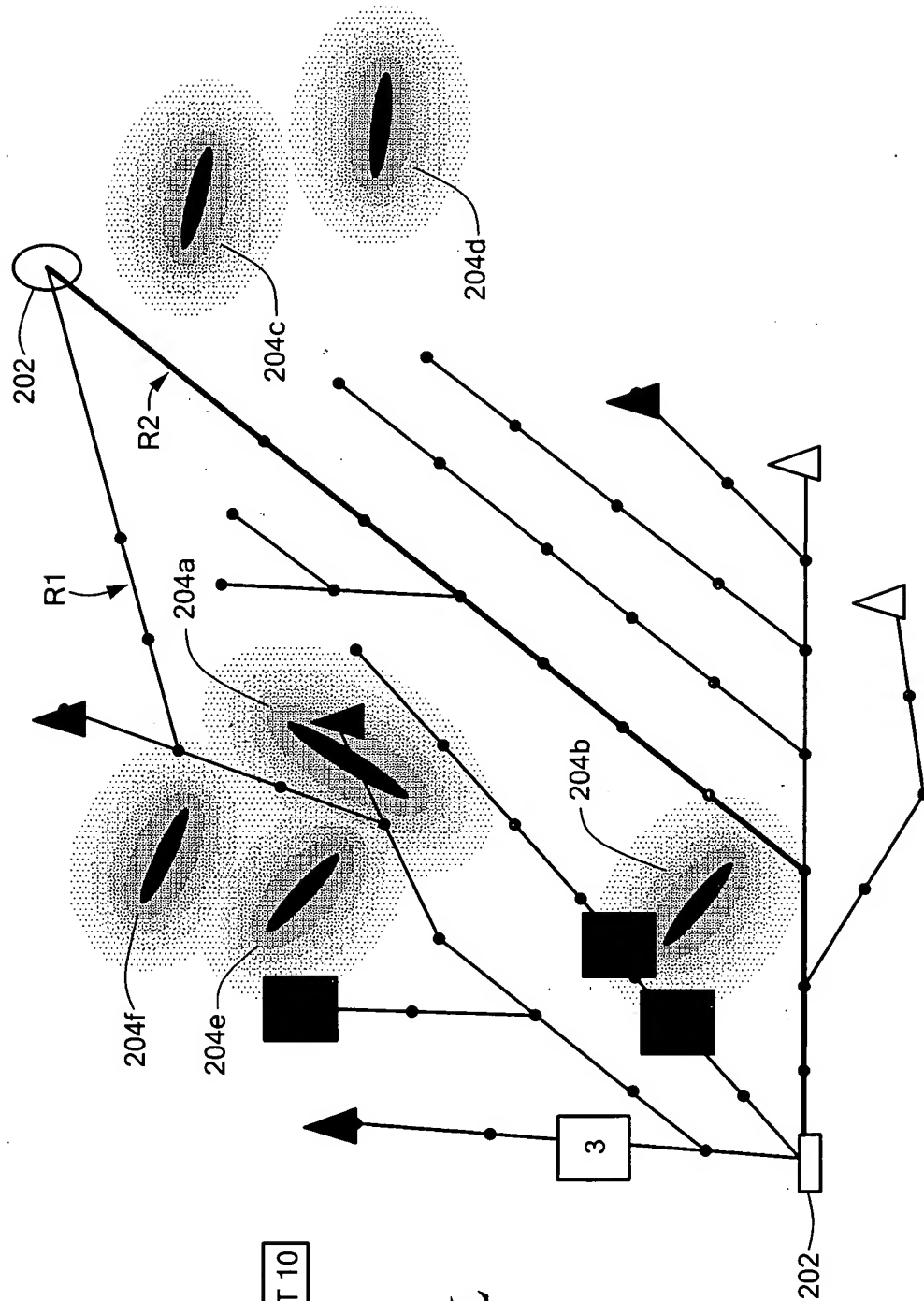
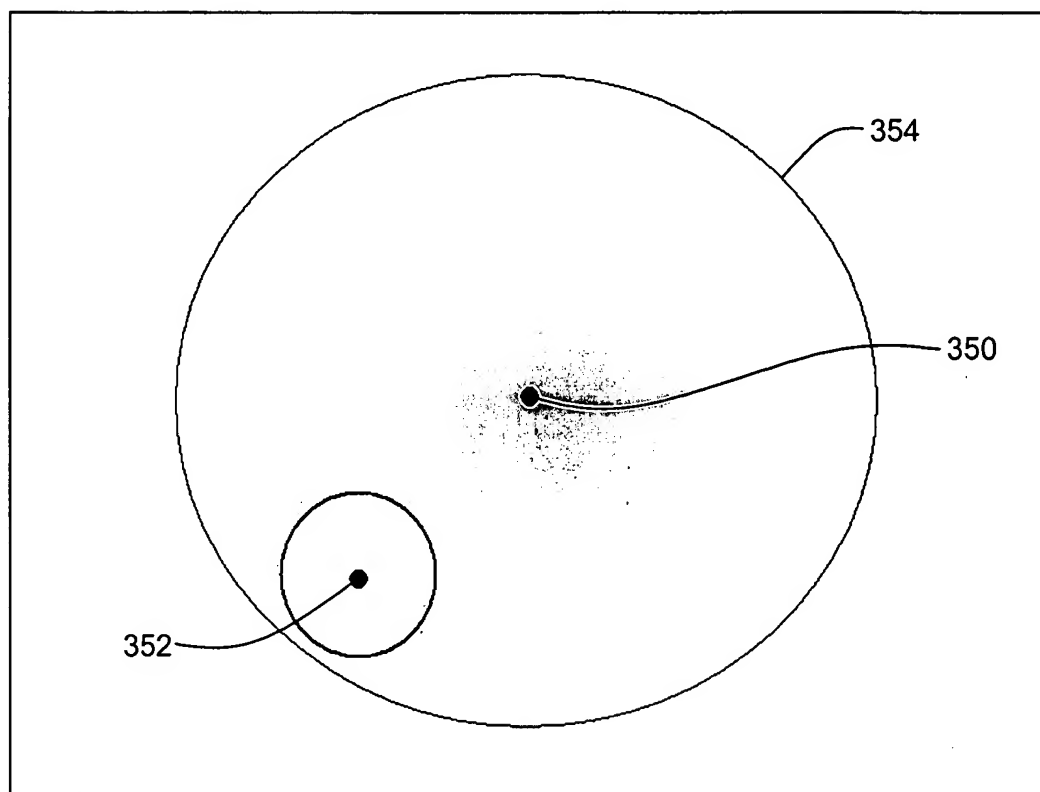


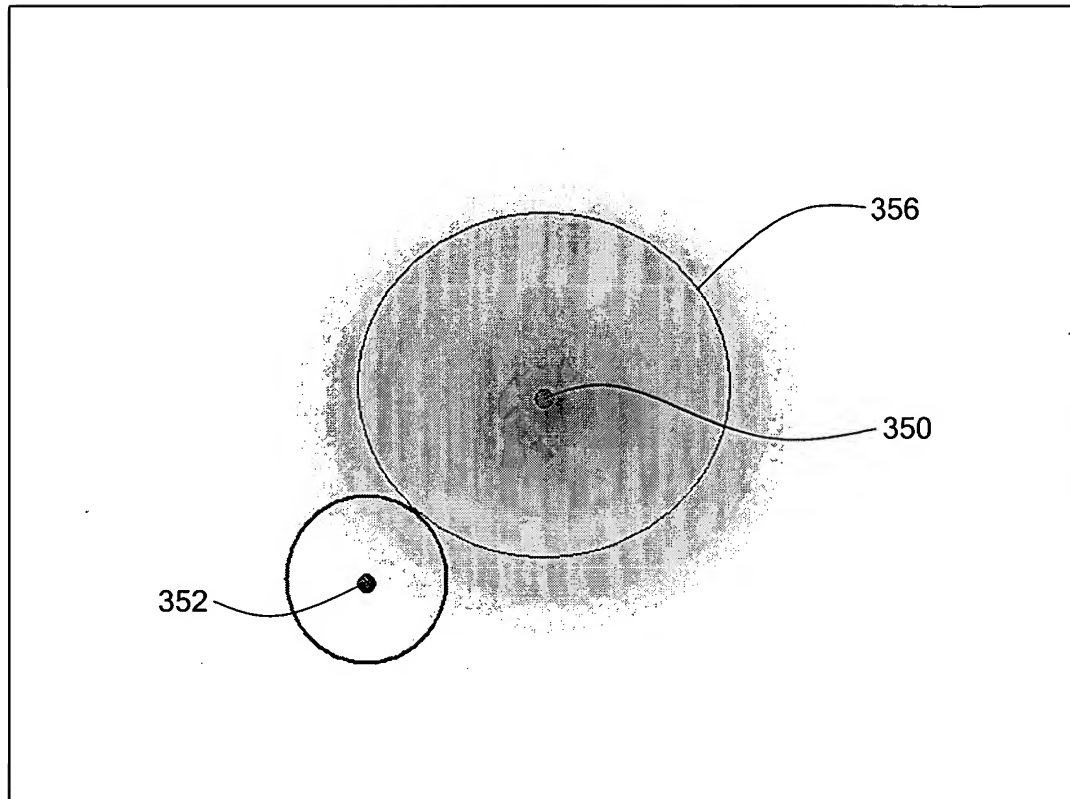
FIG. 2L

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**FIG. 3A**

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**FIG. 3B**

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400

WHILE the stopping conditions given by *Method Component 8* are not satisfied  
     DO *Deterministic Tree Extension*.  
     DO *Random Tree Extension*.  
     Set all leaf nodes that have not been extended in 3. or 4. to DEAD.  
 END WHILE

*Deterministic Tree Extension*

FOR each leaf node,  $N$ , that is not DEAD  
     Apply *Method Component 5* and obtain a set,  $X$ , of candidate path extensions to  $N$ .  
     FOR each candidate path extension,  $\pi \in X$   
         Apply *Method Component 7* to determine if  $\pi$  is feasible.  
         IF  $\pi$  is feasible THEN extend  $N$  by  $\pi$ .  
     END FOR  
 END FOR

*Random Tree Extension*


WHILE *Method Component 5* says to continue random extension  
     Apply *Method Component 5* to obtain a set,  $\Lambda$ , of candidate nodes for random extension.  
     FOR each node,  $N \in \Lambda$ , apply *Method Components 5 and 6* to obtain a set,  $X$ , of candidate path extensions to  $N$ .  
     FOR each candidate path extension,  $\pi \in X$   
         Apply *Method Component 7* to determine if  $\pi$  is feasible.  
         IF  $\pi$  is feasible THEN extend  $N$  by  $\pi$ .  
     END FOR  
 END WHILE

**FIG. 4**



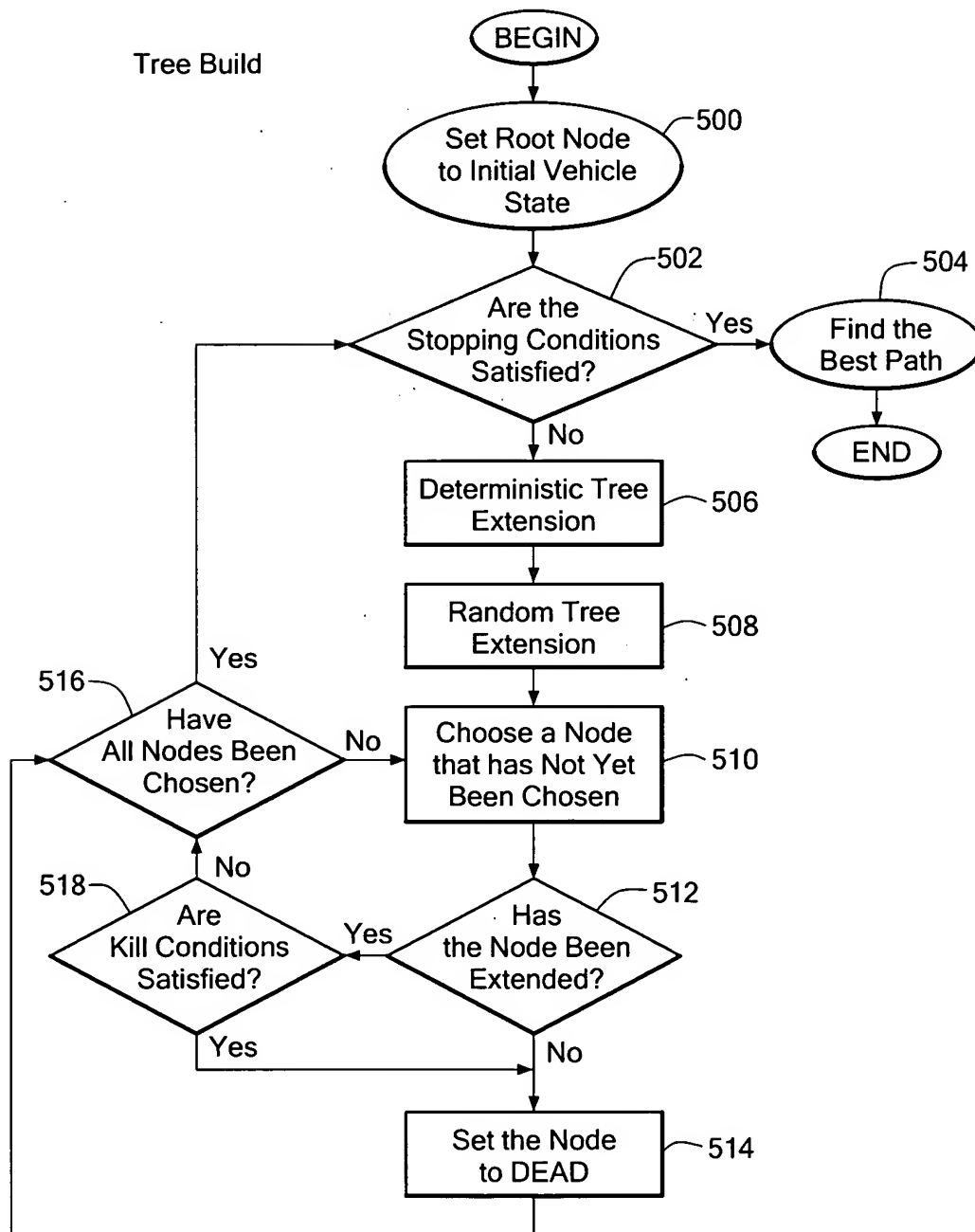
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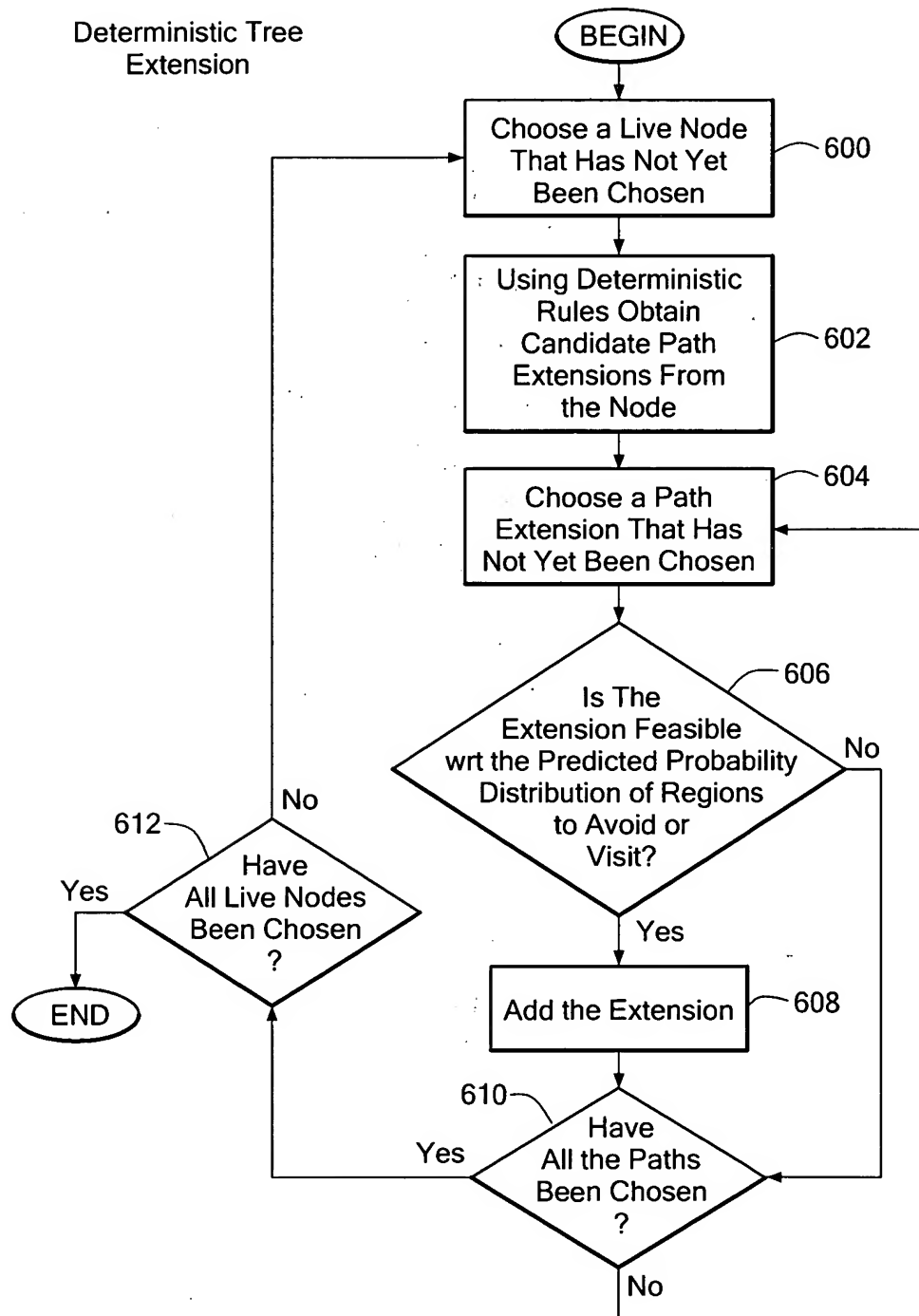
- 
1. Add the root node at your current position to *T*;
  2. Obtain the current *Turn Wedge* from the *VMM*;
  3. FOR each of *#SN* directions determined by discrete uniform distribution  
In the *Turn Wedge*, attempt to extend in the direction;
  4. END FOR;
  5. IF it is not possible to extend in all *#SN* directions
  6. THEN choose at most *#RA* random directions within the *Turn Wedge* and attempt  
to extend in these directions until *#SN* extensions have been  
attained;
  7. END IF;
  8. WHILE (*Stop Flag* == FALSE)  
Set *Active Leaf List* = *New Leaf List*;  
Set *New Leaf List* to Empty;  
FOR each *Active* leaf node, *N*, in *T*  
Attempt to extend straight ahead from *N*;  
Attempt to extend towards the goal from *N*;  
END FOR;  
FOR each of the, at most, *#RN Active* leaf nodes having the best  
*NM*  
Obtain the current *Turn Wedge* from the *VMM*;  
Choose *#RE* random directions within the *Turn Wedge* and attempt to  
Extend in each of these directions;  
IF it is not possible to extend in all *#RE* directions  
THEN chose at most *#RA* random directions within the *Turn Wedge*  
and attempt to extend in these directions until *#RE*  
Extensions have been attained;  
END IF;  
END FOR;  
IF the *Stop Condition* has been met  
Set *Stop Flag* = TRUE;  
END WHILE;

**FIG. 5**

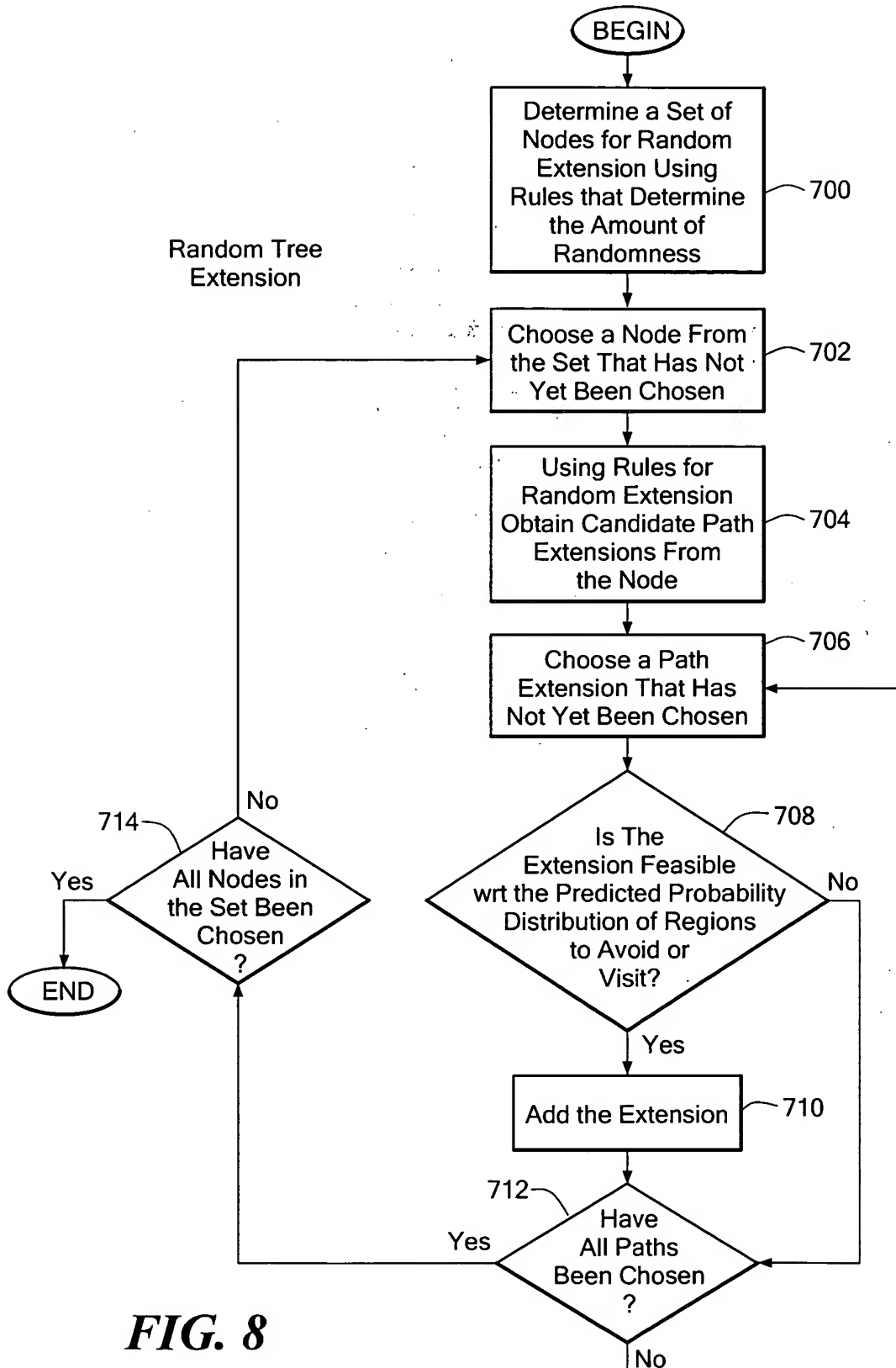
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**FIG. 6**

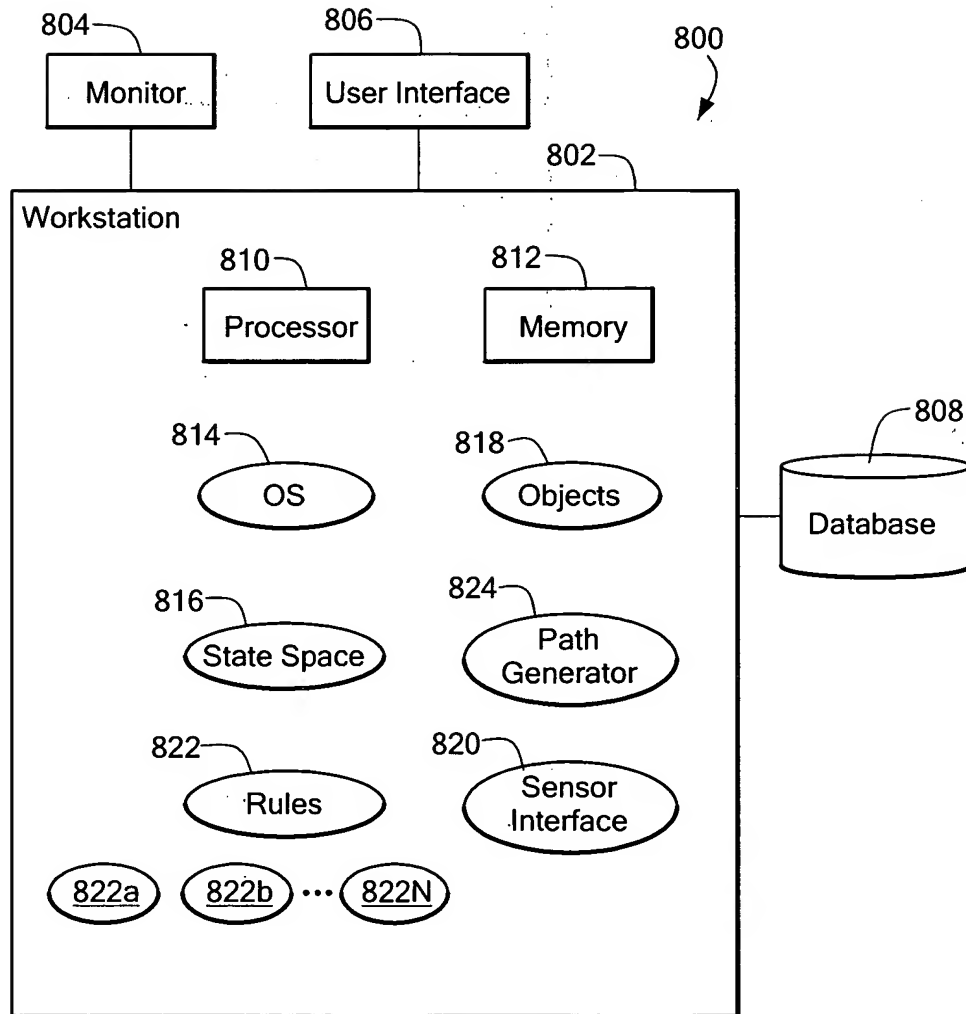
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**FIG. 7**

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**FIG. 9**